

REMARKS

I. STATUS OF THE CLAIMS

Claims 1-22 and 25-35 are currently pending. Of these, claims 1-19, 22, 25 and 30-35 are allowed.

II. REJECTION OF CLAIMS 20 AND 26-29 UNDER 35 USC 103 AS BEING UNPATENTABLE OVER GRUBB (US PATENT NO. 6,344,922)

Claim 20 recites a method for supplying pump light used for Raman amplification in an optical transmission line, comprising (a) a first step of supplying pump light having a first optical power to said optical transmission line, the first optical power being lower than a power level of normal operation for Raman amplification; (b) a second step of detecting optical power of light Raman-amplified by said pump light having said first optical power; (c) a third step of supplying pump light having a second optical power higher than said first optical power and higher than the power level of normal operation for Raman amplification, to said optical transmission line; (d) a fourth step of detecting optical power of light Raman-amplified by said pump light having said second optical power; and (e) a fifth step of giving a warning of optical damage when a comparison result between detection results of the second step and the fourth step is within a predetermined range.

On page 3 of the Office Action, the Examiner concedes that "Grubb does not specific discloses ... the first optical power being lower than a power level of normal operation for Raman amplifier or the second optical power being higher than a power level of normal operation for Raman application". Instead, the Examiner asserts that the setting of such power levels would be "merely an engineering design choice".

The applicants strongly disagree that the setting of such power levels would be "merely an engineering design choice". For example, as shown in FIG. 13, and described in the corresponding disclosure on page 41, line 7, through page 42, line 24, of the present application, various embodiments of the present invention can, for example, give a warning of optical damage. See especially, for example, column 41, lines 7-8, and page 42, lines 14-15, of the present application. Grubb is not directed to warning of optical damage, and does not disclose or suggest how power levels can be set to warn of optical damage. Therefore, it is respectfully submitted that the specific power levels recited in claim 20 would not be obvious in view of Grubb.

Moreover, the Examiner asserts that controller 34 in FIG. 5(B) of Grubb gives a warning when a comparison result between detection results is within a predetermined range. *However, the Examiner has not shown any portion of Grubb that explicitly or implicitly describes the giving of a warning.* It is respectfully submitted that the Examiner is reading too much operation into

the controller in Grubb.

Instead, in Grubb, it appears that pump lights are automatically adjusted, and no warning is required or given.

To further clarify the differences over Grubb, please note that claim 20 is amended to recite that a warning "of optical damage" is given. Support for the amendment is found, for example, in FIG. 13, and the corresponding disclosure on page 41, line 7, through page 42, line 24, of the present application.

* * *

Claim 26 recites the first pump light source being located in the repeater station, and the second pump light source being located in the transmitting station or the receiving station. As an example, in FIG. 1 of the present application, a pump light source 21-2 is located in a repeater station 14-1, and a different pump light source 21-1 is located in transmitting station 11.

Grubb discloses a plurality of devices 12 positioned along a transmission line. See, for example, devices 12 in FIG. 2 of Grubb. Each device 12 supplies Raman pump light to the transmission line.

However, in Grubb, devices 12 are positioned along the transmission line between transmitters and receivers. See, for example, FIG. 2, of Grubb. Grubb does not disclose or suggest that a first pump light source is located in a repeater, and that a second pump light source is located in a transmitting station or receiving station, as recited, for example, in claim 26.

On page 4 of the outstanding Office Action, the Examiner notes that FIG. 5(a) of Grubb discloses a plurality of pump light sources 32. *However, as can be seen from FIG. 5(a), each of these pump light sources 32 are in the same device 12.*

Therefore, it is respectfully submitted that the overall structure of the system in Grubb is significantly different than that recited, for example, in claim 26.

* * *

In view of the above, it is respectfully submitted that the rejection is overcome.

III. REJECTION OF CLAIM 21 UNDER 35 USC 103 AS BEING UNPATENTABLE OVER GRUBB IN VIEW OF WU (US PATENT NO. 6,423,963)

Claim 21 is dependent from claim 20. Therefore, the comments in Section II, for distinguishing over Grubb, also apply here.

Wu discloses that pump light is shut off in response to a change in a supervisory signal transmitted from a supervisory source, to shut off the pump light in the event of a fiber cut. See, for example, FIG. 1, and the disclosure in column 4, line 28, through column 5, line 36, of Wu.

None of the references disclose or suggest stopping the supply of pump light when a

warning is given in the specific situation as recited in claim 21.

In view of the above, it is respectfully submitted that the rejection is overcome.

IV. CONCLUSION

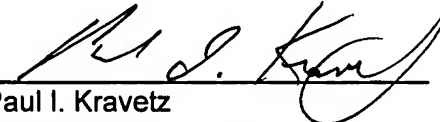
In view of the above, it is respectfully submitted that the application is in condition for allowance and a Notice of Allowance is earnestly solicited.

If any further fees are required in connection with the filing of this response, please charge such fees to our Deposit Account No. 19-3935.

Respectfully submitted,

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Date: August 22, 2006

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